**In The Claims:**

Claim 1. (original) An UV-programmed P-type Mask ROM, comprising:

a heavily doped N-well in a substrate;

a plurality of bit lines in the heavily doped N-well;

an insulating layer on the bit lines;

a plurality of word lines crossing over the bit lines, wherein the substrate under a word line and between two bit lines serves as a memory cell;

a charge trapping layer between the word lines and the heavily doped N-well; and

an UV-blocking layer over the substrate having a plurality of openings over selected memory cells, wherein the selected memory cells are written by using UV light.

Claim 2. (original) The UV-programmed P-type Mask ROM of claim 1, wherein a dopant of the heavily doped N-well comprises phosphorous.

Claim 3. (original) The UV-programmed P-type Mask ROM of claim 1, wherein the selected memory cells written by using UV light store e-bit "1".

Claim 4. (original) The UV-programmed P-type Mask ROM of claim 1, wherein the charge trapping layer comprises a silicon oxide/silicon nitride/silicon oxide (ONO) composite layer.

Claim 5. (original) The UV-programmed P-type Mask ROM of claim 1, wherein the insulating layer comprises a thermal oxide layer.

Claim 6. (original) The UV-programmed P-type Mask ROM of claim 1, wherein the UV-blocking layer comprises an UV-absorbable layer.

Claim 7. (original) The UV-programmed P-type Mask ROM of claim 6, wherein the UV-absorbable layer comprises an anti-reflection coating (ARC).

**Claims 8-20 (canceled)**